Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims:

Please amend the claims as follows without prejudice. No new matter has been added by way of these amendments.

1. (Currently amended) Method for determining, in a geological formation crossed by a cased well, the resistivity of the formation beyond the casing comprising the following steps:

a) carrying out at least one resistivity log of the formation in the non-cased well before casing,

b) carrying out at least one resistivity log of the formation in the cased well by means of a tool,

c) identifying at least one calibration zone of the formation in which the resistivity given by the log in the cased well and that given by the log in the non-cased well has remained substantially constant,

d) constructing a model of the formation by a parametric inversion method from the results of the log in the non-cased well and the characteristics of the well and the casing,

e) calculating the response of the tool to said model,

f) comparing the response of the tool to said model and the resistivity log in the cased well in the calibration zone while changing, if necessary, in the model, a geometric factor k conditioning the resistivity as long as the comparison criterion is not satisfactory,

g) deducing when comparison criterion is satisfactory, the geometric factor k of the model,

h) determining ~~calculating~~ the resistivity of the formation beyond the casing by calculation using ~~means of~~ the resistivity log in the cased well and at least the geometric factor k deduced for at least one zone of the formation different to the calibration zone.

2. (Previously presented) Method according to claim 1, wherein when several calibration zones are determined, they have different resistivities.

3. (Previously presented) Method according to claim 2, wherein it comprises a step of evaluating the resistivity (Rcem) of a cement introduced between the casing and the well by comparing the response of the tool to said model and the resistivity log in the cased well in a low resistivity calibration zone while changing, if necessary, the resistivity of the cement in the model, as long as the comparison criterion is not satisfactory, the evaluated resistivity of the cement being used in step h.

4. (Previously presented) Method according to either of claims 2, wherein it comprises a step of evaluating an offset current (Ioff) by comparison between the response of the tool to said model and the resistivity log in the cased well in a high resistivity calibration zone, by changing, if necessary, the offset current as long as the comparison criterion is not satisfactory, the evaluated offset current being used in step h.

5. (Previously presented) Method according claim 1, wherein the construction of the model is moreover carried out with the results of the resistivity logs in the cased well if one has several resistivity logs in the cased well.

6. (Previously presented) Method according to claim 1, wherein it comprises, before step d, a step of in-depth recalibration of the resistivity from the log in the non-cased well and the resistivity from the log in the cased well, so that said recalibrated resistivities correspond to substantially identical depths.

7. (Previously presented) Method according to claim 1, wherein it comprises a preliminary step of estimating the geometric factor k which is useful for obtaining the resistivity from the resistivity log carried out in the cased well.

8. (Previously presented) Method according to claims 1, wherein it comprises a preliminary step of estimating an offset current (Ioff) which is useful for obtaining the resistivity from the resistivity log carried out in the cased well.

9. (Previously presented) Method according to claim 1, wherein it comprises a preliminary step of estimating the resistivity of the cement (Rcem) introduced between the casing and the well, said resistivity being useful for obtaining the resistivity from the resistivity log carried out in the cased well.

10. (Previously presented) Method according to claim 1, wherein the model integrates an initial resistivity value (Rcem) for the cement introduced between the casing (1) and the well (2).

11. (Previously presented) Method according to claim 1, wherein the model comprises two concentric regions (15, 20) having different resistivities separated by an interface (31), one of the regions being close to the well, the other further away.

12. (Previously presented) Method according to claim 11, wherein it comprises a step of carrying out at least one log of the section of capture that makes it possible to deduce, knowing the salinity in the near region, the resistivity (Rxo) in the near region, then a step of calculating, by means of the model, in at least one zone distinct from the calibration zone, the resistivity in the distant region (Rt) and the position of the interface (di).

13. (Currently amended) Method for determining the salinity of the water and / or the saturation in water located in a substantially homogeneous formation crossed by a cased well, wherein it consists in carrying out a log of the section of capture in the cased well, and combining the results of the log of the section of capture with the resistivity determined by the method according to claim-1, in order to determine the salinity of the water and / or the saturation.